

# Sedimentary Rocks and the Geologic History of Your Community

## Think About It

Page U4

Date

Page #

---

- How does sediment (little pieces of rock) “turn into” sedimentary rock? (one big rock)



## WHAT DO YOU THINK?

## Activity 1

### Investigate Part A

Page U5

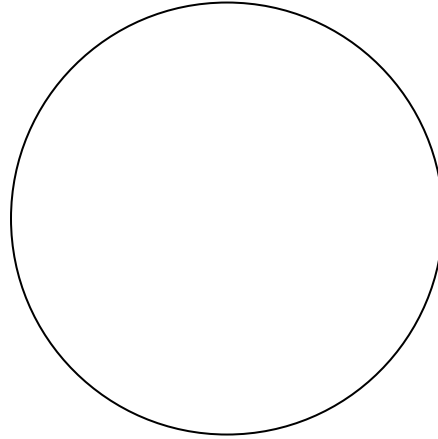
Date

Page #

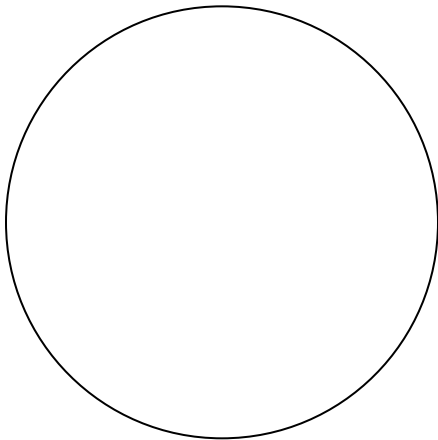
---

6a. Draw a labeled diagram of each sedimentary rock.

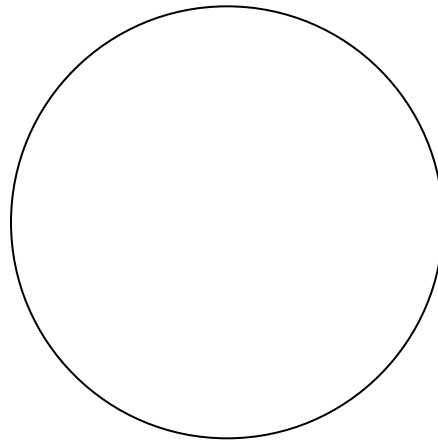
mudstone



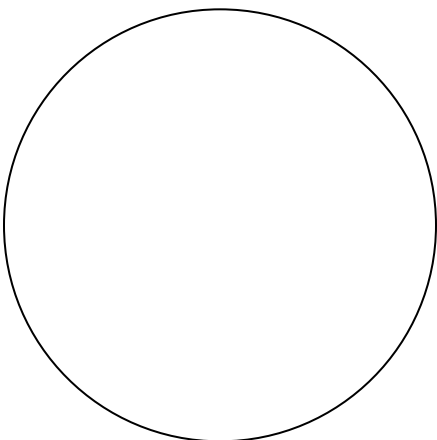
rock salt



sandstone



conglomerate



## Activity 1

### Investigate Part B

Page U6

Date

Page #

---

1a. Make a data table.

<b>Rock</b>	<b>Description</b>	<b>Sedimentary Type</b>	<b>Name</b>
1	Large pieces	Clastic	Conglomerate
2			
3			
4			
a			
c			
e			
h			
l			

## Activity 1 Sedimentary Rocks

### **Digging Deeper**

Pages U8-U12

Date \_\_\_\_\_

Page # \_\_\_\_\_

<http://www.brainpop.com/science/earthsystem/typesofrocks/>  
/

**Learning Objective:**     **In writing, SWBAT describe the processes of weathering and erosion and list causes of each using academic language in order to understand how sedimentary rocks form and change.**

### **Weathering**

a process that breaks rocks into smaller pieces

Causes of  
weathering

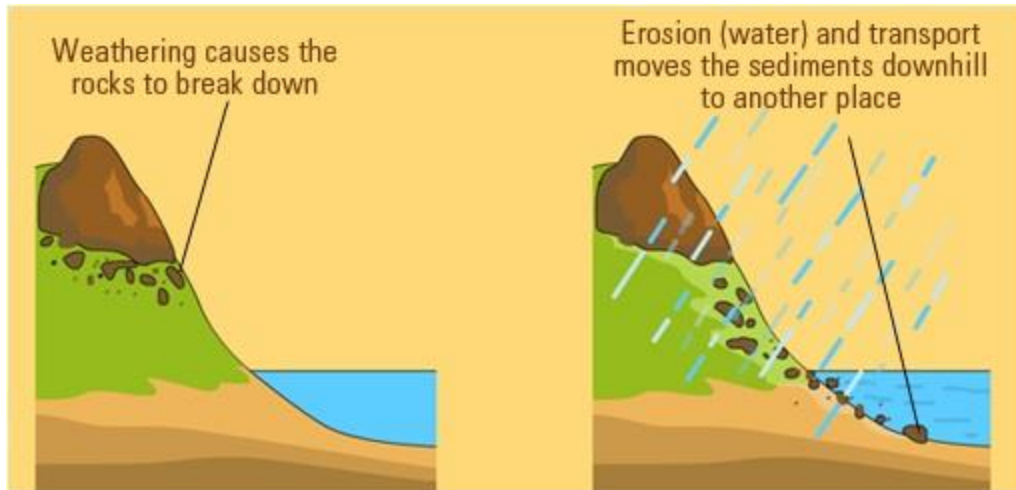
- heat
- water
- wind
- ice
- plant growth
- chemicals (acid rain)

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter_no=visualization)

<http://www.brainpop.com/science/weather/weathering/>

## Erosion

the movement of sediments to a new location



Causes of erosion

- water
- wind
- gravity
- glaciers

<http://www.brainpop.com/science/earthsystem/erosion/>

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es1303/es1303page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1303/es1303page01.cfm?chapter_no=visualization)

[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter_no=visualization)

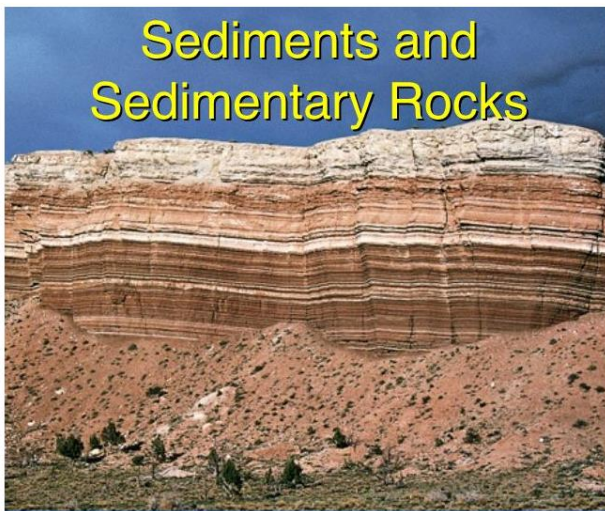
<http://www.learner.org/interactives/rockcycle/change3.html>

How sediments  
form

the processes of weathering and erosion break solid rock down into sediments and deposit them in new locations

## Sedimentary rock

a rock, usually layered, that forms when sediments are compressed and cemented together



Classification

sedimentary rocks are classified by:

- their composition
- how they form

3 types of  
sedimentary rock

1. clastic sedimentary
2. chemical sedimentary
3. organic sedimentary



**Learning Objectives:** In writing, SWBAT describe how the three types of sedimentary rocks form and give examples of each type using academic language in order to understand their role in the rock cycle.

**Clastic sedimentary rock**

a sedimentary rock formed from mostly of pieces of older, broken rocks

Examples of clastic sedimentary rocks

- conglomerate
- sandstone
- siltstone
- mudstone
- claystone
- shale



**Chemical sedimentary rock**

a sedimentary rock formed by a solution of minerals

Examples of  
chemical  
sedimentary rock

- gypsum
- rock salt (halite)
- limestone
- dolomite



Limestone

the most common chemical  
sedimentary rock





Large areas of the central United States have limestone bedrock because oceans covered much of the country for millions of years

## **Organic sedimentary rock**

a sedimentary rock made mainly of the remains of organisms that are compacted together

Example of organic sedimentary rock

coal

How coal forms

plants in swamps with rich plant life die and are buried by the remains of later plants

Over time, the plant material is compressed so much by the weight of sediment from above that it is turned into rock

Peat

the first material to form, is not yet buried very deeply



Lignite

brown coal



Bituminous coal

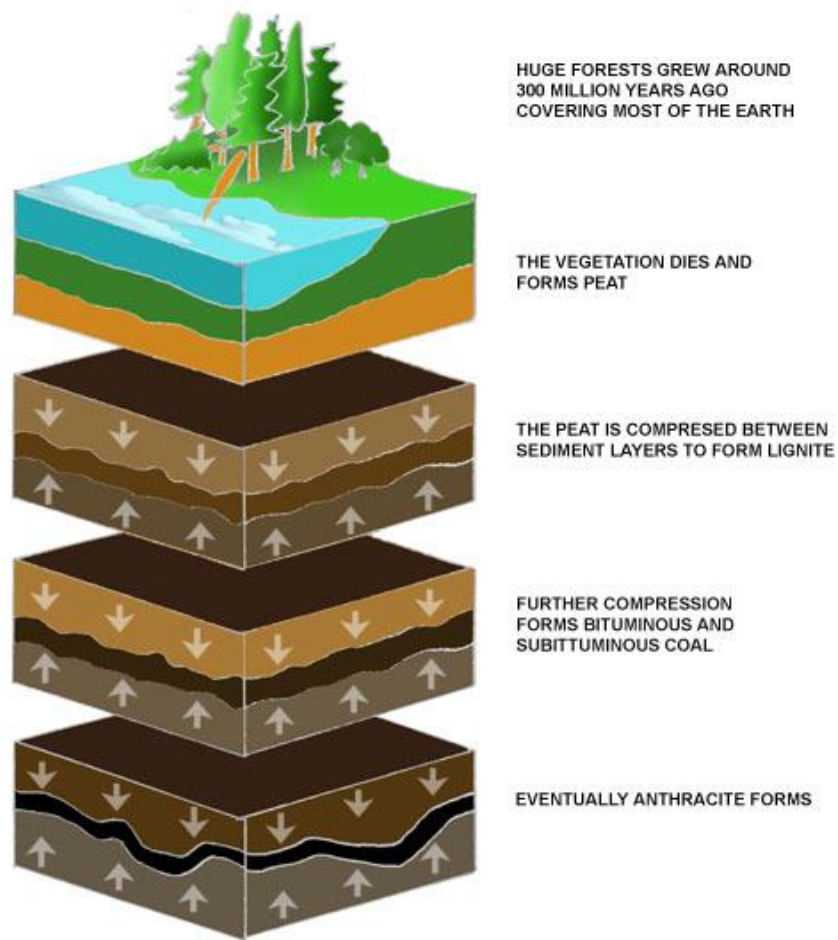
soft coal



Anthracite

hard coal





[http://www.hk-phy.org/energy/power/source\\_phy/flash/formation\\_e.html](http://www.hk-phy.org/energy/power/source_phy/flash/formation_e.html)

**Learning Objective:** In writing, SWBAT compare and contrast compaction and cementation using academic language in order to understand how sedimentary rocks form.

## **Compaction**

the process of sediments being compressed by the weight of the layers above them



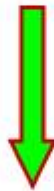
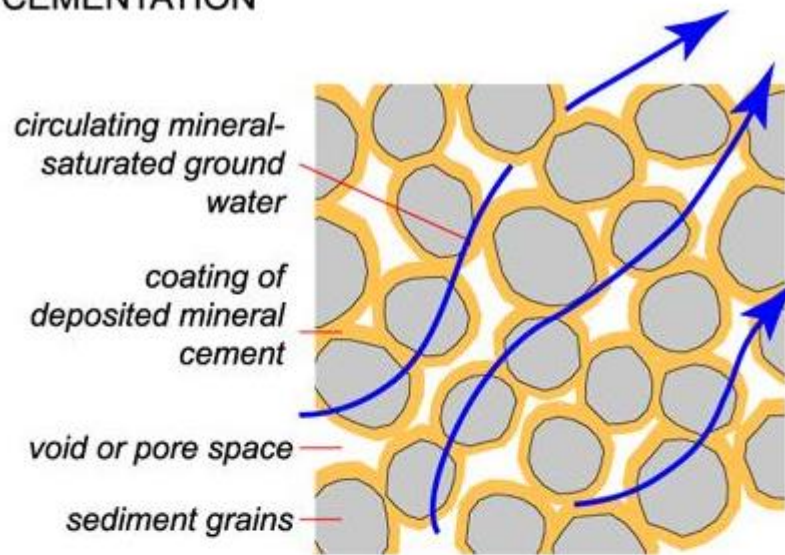
<http://www.absorblearning.com/media/item.action?quick=136>

## **Cementation**

the process of sediments sticking together from a solution of minerals



## CEMENTATION



Sediments to rock

the processes of compaction and cementation change sediments to solid sedimentary rock



[http://www.classzone.com/books/earth\\_science/terc/content/visualizations/es0605/es0605page01.cfm?chapter\\_no=visualization](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0605/es0605page01.cfm?chapter_no=visualization)

<http://www.learner.org/interactives/rockcycle/change3.html>

<http://www.geolsoc.org.uk/ks3/gsl/education/resources/rockcycle/page3559.html>

## Activity 1

### Check Your Understanding

Date \_\_\_\_\_

Page U12

Page # \_\_\_\_\_

---

1. Explain how the three main types of sedimentary rock form.

2. What does the discovery of limestone at the top of Mt. Everest suggest about how the geography of that area has changed?

3. What does the discovery of ancient coal in Antarctica suggest about the past climate of that area?

4. Create a Venn diagram to compare and contrast the processes of weathering and erosion.